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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,490	09/29/2003	Kwang Hyo Chung	123034-05004739	8465

22429 7590 06/25/2007
LOWE HAUPTMAN BERNER, LLP
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ALEXANDRIA, VA 22314

EXAMINER

NAGPAUL, JYOTI

ART UNIT	PAPER NUMBER
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1743

MAIL DATE	DELIVERY MODE
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06/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/671,490

Applicant(s)

CHUNG ET AL.

Examiner

Jyoti Nagpaul

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Amendment filed on April 20, 2007 has been acknowledged. Claims 1-16 are pending.

Response to Amendment

Rejection of Claims 1-16 as being anticipated by Kellogg (US 2001/0001060) has been modified in light of applicant's amendments.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-16** are rejected under 35 U.S.C. 102(b) as being anticipated by Kellogg (US 2001/0001060).

Kellogg teaches a device for controlling fluid using surface tension of the fluid. The device comprises at least one storage chamber (301) to which a fluid is injected and stored, at least one reaction chamber (307) in which a predetermined reaction occurs on the fluid, and at least one exhaust chamber (310) in which fluid used as a result of the reaction is exhausted. The device further comprises a first stop valve/capillary junction (303) located between the at least one storage chamber (301) and the at least one reaction chamber (307). Kellogg further teaches a second stop valve/capillary junction of (307) the reaction chamber that is located between the at least one reaction chamber (307) and the at least one exhaust chamber (310). Kellogg

Art Unit: 1743

further teaches at least one side connecting channel (305) which connects the first stop valve (303) to the second stop valve/ capillary junction of (307) the reaction chamber wherein the stop valves stop the flow of the fluid using the surface tension of the fluid and the flow through the connecting channel (305) opens the stop valve/capillary junction. The device further comprises at least one flow delay part (314) that is formed within the side connecting channel (305) and delays flow of the fluid by surface tension of the fluid. Kellogg further teaches the fluid moves from the storage chamber (301) to the reaction chamber (307) and exhaust chamber (3310) by means of surface tension while replacement of the fluid with a different fluid/gas/air naturally occurs in the reaction chamber (307). (See Figures 5A-6K) (See [0109]-[0118]) The stop valves and the at least one flow delay part adjusts the surface tension by deforming the channel geometry. The device further comprises at least two device connected in series or in parallel. The device further comprises a filter and at least one separation chamber. (See [0085] and [0194]) The device further comprises at least one air vent (212).

Response to Arguments

Applicant's arguments filed on April 20, 2007 have been fully considered but they are not persuasive.

Applicants argue that Kellogg uses an apparatus using centripetal force to control the flow of fluids and not the use of surface tension. Examiner agrees that Kellogg uses centripetal force to control the flow of fluids. However, Examiner respectfully disagrees that Kellogg does not use surface tension to move the fluid. Kellogg uses centripetal force to drive the surface tension of the fluid through capillary microchannels of the

Art Unit: 1743

platform. Examiner notes that these are capillary microchannels and thus it is inherent that there is surface tension. Also, the claim as recited does not exclude the use of any other device to move the fluid through the device.

Applicants also argue that Kellogg does not teach a "side connecting channel". Examiner respectfully disagrees, Applicants merely claim "a side connecting channel" and do not claim a "main channel".

Applicants also argue that Kellogg does not teach a flow delay part. This has been addressed in the above rejection.

Conclusion

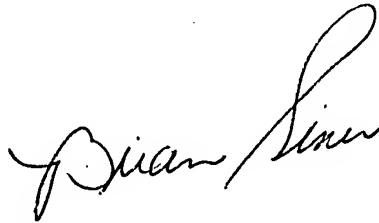
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JN

A handwritten signature in black ink, appearing to read "Brian Liner". The signature is written in a cursive, flowing style with a large initial "B" and a long, sweeping underline.